2013 Pat's Bay, Bay Natchez, Lake Natchez Vegetation Control Plan

LDWF, Inland Fisheries

1. Waterbody type – Pat's Bay: swamp bayou, Bay Natchez: bay, Lake Natchez: small lake. All three waterbodies are located in the Atchafalaya Basin; Pat's Bay east of the East Atchafalaya Protection Levee, and both Bay and Lake Natchez east of the same levee, north of Lake Verret.
2. Water level range (MSL)– N/A
3. Surface area range – Pat's Bay – 284 acres, Bay Natchez – 10 acres, Lake Natchez – 110 acres
4. Average depth – 5 ft in Pat's Bay; 3 ft in Bay Natchez and Lake Natchez
5. Waterbody Board or Lake Commission – Fish and wildlife resources are managed by the Louisiana Department of Wildlife and Fisheries (LDWF). Primary contact information – Rachel Walley – District 7 Inland Fisheries Biologist Manager

What significant stakeholders use the lake?
Pat's Bay and its surrounding lakes and bayous are a popular recreational and commercial fishing area located just outside the East Atchafalaya Basin Protection Levee. Frog hunting is also a popular activity in Pat's Bay. Bay and Lake Natchez attract local recreational anglers.

What are their needs and concerns? What is the history of aquatic vegetation complaints?
Anglers, hunters, and commercial fisherman want to be able to access these popular spots. They are concerned that the vegetation/siltation issues will not allow them to do so in the future.

In recent years, Pat's Bay has been taken over by hydrilla. There are other species (coontail, southern naiad, and fanwort) in Pat's Bay, but hydrilla comprises about 90% of the problem. The hydrilla infestation has severely impeded access and fishing opportunities. Siltation at the north end of Pat's Bay has reduced flow and water input to the rest of the bay making it hospitable for submerged vegetation growth. The lack of flow and presence of vegetation also make the area attractive to recreational boaters and anglers. Other than the north end, Pat's Bay averages about 5 feet in depth. Also, once hydrilla became established it likely aided in clearing up the water which allowed the problem to spread throughout the majority of the area.

Bay Natchez and Lake Natchez suffer from siltation issues. White Castle Canal drains a large area of agricultural fields directly into Bay Natchez and Lake Natchez. Siltation resulting from the drainage has led to diminishing water depths. Lower water depths have led to an increase in submerged vegetation (coontail, hydrilla, fanwort, slender pondweed, and southern naiad). Giant salvinia was recently reported in Pat's Bay, Bay Natchez and Lake Natchez.

Have there been any controversial issues on the lake?
N/A

Aquatic Vegetation Status:

Predictions for 2013:

Pat's Bay

Problematic species:

Hydrilla (*Hydrilla verticillata*) - 225 acres
Water hyacinth (*Eichhornia crassipes*) – 180 acres
Filamentous algae – 75 acres
Alligator weed (*Alternanthera philoxeroides*) – 50 acres
Giant salvinia (*Salvinia molesta*) – 20 acres

Beneficial species

Coontail (*Ceratophyllum demersum*) – 10 acres
Southern naiad (*Najas guadalupensis*) – 10 acres
Fanwort (*Cabomba caroliniana*) – 5 acres

Bay Natchez

Problematic Species:

American Lotus (*Nelumbo lutea*) – 40 acres
Hydrilla (*Hydrilla verticillata*) – 30 acres
Giant Salvinia (*Salvinia molesta*) – 20 acres

Beneficial Species:

Coontail (*Ceratophyllum demersum*) – 15 acres
Southern naiad (*Najas guadalupensis*) – 10 acres
Fanwort (*Cabomba caroliniana*) – 10 acres
Pondweeds (*Potamogeton spp.*) – 5 acres

Lake Natchez

Problematic Species:

American Lotus (*Nelumbo lutea*) – 30 acres
Hydrilla (*Hydrilla verticillata*) – 20 acres
Giant Salvinia (*Salvinia molesta*) – 20 acres

Beneficial Species:

Coontail (*Ceratophyllum demersum*) – 10 acres
Southern naiad (*Najas guadalupensis*) – 10 acres
Fanwort (*Cabomba caroliniana*) – 10 acres
Pondweeds (*Potamogeton spp.*) – 5 acres

Limitations:

There are no significant limitations that would impede an herbicide application. The primary issue in Bay Natchez and Lake Natchez is siltation and diminishing average water depth. This is a recurring problem in the area and will need to be addressed annually. Currently, most infested areas are accessible by LDWF spray crews.

Past Control Measures:

Historically, vegetation control for Pat's Bay, Bay Natchez and Lake Natchez has been the responsibility of the US Army Corps of Engineers (USACE). Herbicide applications were limited in scale and conducted to control emerged vegetation only. Funding for those efforts was discontinued in 2011 and LDWF assumed responsibility for treatment in 2012.

Giant salvinia weevils were released in Pat's Bay and in the Lake Natchez area in March 2012. Post-release collections of plant material from these areas have revealed a healthy population of weevils present. Colonization and spread of the giant salvinia weevils appears to be rapid in these areas, particularly around Lake Natchez.

Three private spray operations were contracted by LDWF in 2012 for herbicide applications in this area:

1. In November of 2012, water hyacinth in and around the Pat's Bay area, Upper Grand River, and Old Bayou Maringouin was treated with glyphosate at a rate of 1gallon per acre (gpa) with 0.25 gpa surfactant. The total amount of vegetation treated was 415 acres. An 85 to 90 percent kill was achieved.
2. In the Bay/Lake Natchez area, and south in the Goddel Bayou/Old River area to the Highway 70 bridge a contract was issued for the control of water hyacinth that had accumulated on the bridge as well as dense mats that were present going north back to Bay Natchez. In late July and early August, a total of 480 acres of vegetation were sprayed in this area with 2,4-D at a rate of 0.5 gpa with 0.25 gpa of surfactant. An 85 to 90 percent kill was achieved.
3. During late August and September, in the same area as #2 (Bay/Lake Natchez, Goddel Bayou/Old River to Hwy 70), a second contract was issued to control not only water hyacinth, but also giant salvinia and sedge that had become prevalent in the area. In this case, glyphosate was applied at a rate of 1 gpa with 0.25 gpa surfactant. A total of 655 acres were sprayed. An 85 to 90 percent kill was achieved.

Recommendations:

Pat's Bay, Bay Natchez, and Lake Natchez will be assessed in the late winter/early spring of 2013. They will also be assessed monthly during the growing season.

Pat's Bay
From observations made during the early parts of 2011, submerged vegetation (primarily

hydrilla) becomes overabundant in late March / early April. However, complaints are minimal, and the vegetation is vital to other recreational activities in Pat's Bay. Herbicide applications will be made as needed by either the District 7 spray crew or private applicators and will be limited to emergent/floating vegetation.

Giant salvinia weevils (*Cyrtobagous salviniae*) will continue to be released, as they become available, in all areas containing the plant to aid in control efforts.

Samples of giant salvinia will be collected throughout the year to determine presence/abundance of the weevils.

Bay Natchez / Lake Natchez

Because American lotus and giant salvinia grow together, they will be treated with a combination of diquat (0.25 gallons per acre) and glyphosate (0.75 gallons per acre) with Aqua King Max (0.25 gallons per acre) and Thoroughbred (12 ounces per acre). Efforts to treat all accessible giant salvinia will take place in early spring. Those areas will be monitored monthly and treated by the District 7 spray crew or private applicators as needed.

Giant salvinia weevils (*Cyrtobagous salviniae)* will continue to be released at regular intervals in all areas containing the plant to aid in control efforts.

Samples of giant salvinia will be collected throughout the year to determine presence/abundance of giant salvinia weevils.

Maps:


Bay Natchez Lake Natchez
Lake Natchez
Bay Natchez
0.75
Miles